The Aeronautical Journal of the Royal Aeronautical Society

INCORPORATING THE INSTITUTION OF AERONAUTICAL ENGINEERS AND THE HELICOPTER ASSOCIATION OF GREAT BRITAIN

VOLUME LXXXX

JANUARY—DECEMBER 1986

The following is based on the indexing of the RAeS Publications Index 1897-1977, published by the Society.

ABU-ASSAF, H. A., ALI, K. A. M., BLOY, A. W. and LAMONT, P. J.
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, pp 237-243 (June/July). *Errata, p 301 (Oct.)*

AERODYNAMICS
The assessment of boundary layer two-dimensionality, C. J. Fraser, pp 41-48 (Feb.).
A calculation method for two-dimensional wall-bounded turbulent flows, L. J. Johnston, pp 174-184. (May).
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).
Damage thresholds for low velocity impact on aircraft structural composites, B. A. A. O'Kane and P. P. Benham, pp 368-372 (Nov.).
The effect of atmospheric turbulence on the dispersion of unguided missiles, M. Curcin and R. I. Harris, pp 139-151 (April).
An exact integral (field panel method for the calculation of two-dimensional transonic potential flow around complex configurations, P. M. Sinclair, pp 227-236 (June/July).
Experimental investigation of the turbulent boundary layer at high Reynolds numbers and a Mach number of 0·8, L. Gaudet, pp 83-94 (March).
Extension of hot air balloon flight duration through adaption of balloon surface characteristics, W. Hallmann, pp 385-392 (Dec.).
Finite element free vibration analysis of stiffened plates, A. Mukherjee and M. Mukhopadhyay, pp 267-273 (Aug./Sept.).
Frequency-domain application of Gauss-Newton method to extract aircraft longitudinal parameters, S. C. Raisinghani and A. K. Goel, pp 27-34 (Jan.).
The fundamentals of body-freedom flutter, Lt. T. Niblett, pp 373-377 (Nov.).
The induced downwash and lift on a wing of high aspect ratio in unsteady motion, P. Wilmott, pp 63-72 (Feb.).
The influence of roughness trips upon boundary-layer transition. J. C. Gibbings, O. T. Goksel and D. J. Hall, Part 1: Characteristics of wire trips, pp 289-301 (Oct.). Part 2: Characteristics of single spherical trips, pp 357-367 (Nov.). Part 3: Characteristics of rows of spherical transition trips, pp 393-398 (Dec.).
Installation aerodynamics of ejectors in combat aircraft, P. G. Knott and D. N. Cundy, pp 410-413 (Dec.).
Large deflections of a cantilever beam subjected to a tip concentrated rotational load, B. Nageswara Rao, B. P. Shastry and G. Venkateswara Rao, pp 262-266 (Aug./Sept.).
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, A. W. Bloy, P. J. Lamont, H. A. Abu-Assaf and K. A. M. Ali, pp 237-243 (June/July). *Errata, p 301 (Oct.).*
A lock-in effect in the flow over two cylinders, F. H. Barnes, A. J. Baxendale and I. Grant, pp 128-138 (April).
The 'minituft' surface flow visualisation method: experience of use in the RAE 5-m pressurised low-speed wind tunnel, D. G. Dobney, P. Hanson and S. P. Fiddes, pp 10-17 (Jan.).
New rotary rig at RAE and experiments on HIRM, C. O. O'Leary and E. N. Rowthorn, pp 399-409 (Dec.).
A note on the prediction of flying boat take-off, D. Howe, pp 49-52 (Feb.).
On aircraft flight performance in a perturbed atmosphere, L. M. B. C. Campos, pp 302-312 (Oct.).
On application of linearised theory to multi-element aerofoils. Part 2: Effects of thickness, camber and stagger, G. D. Watt and G. V. Parkinson, pp 339-356 (Nov.).
The prediction of the drag of aerofoils and wings at high subsonic speeds, R. C. Lock, pp 207-226 (June/July).
Pressure fluctuations caused by transonic shock-boundary-layer interaction, A. R. G. Mundell and D. G. Mabey, pp 274-282 (Aug./Sept.).
Recent developments in store separation and grid survey techniques using the ARA two-sting rig, M. E. Wood, pp 18-26 (Jan.).
Recent experience in the RAE 5-metre wind tunnel of a china clay method for indicating boundary layer transition, I. R. M. Moir, pp 6-9 (Jan.).
Spiral vortex flow over a swept-back wing, D. I. A. Poll, pp 185-199 (May).
Transonic flow calculations around isolated inlet configurations, A. J. Peace, pp 103-110 (March).
Two-dimensional flow past bluff flexible membranes of low porosity, H. T. Low and B. G. Newman, pp 313-334 (Oct.).

AEROFOILS
An exact integral (field panel) method for the calculation of two-dimensional transonic potential flow around complex configurations, P. M. Sinclair, pp 227-236 (June/July).
On the application of linearised theory to multi-element aerofoils. Part 2: Effects of thickness, camber and stagger, G. D. Watt and G. V. Parkinson, pp 339-356 (Nov.).
The prediction of the drag of aerofoils and wings at high subsonic speeds, R. C. Lock, pp 207-226 (June/July).
Pressure fluctuations caused by transonic shock/boundary-layer interaction, A. R. G. Mundell and D. G. Mabey, pp 274-282 (Aug./Sept.).
Spiral vortex flow over a swept-back wing, D. I. A. Poll, pp 185-199 (May).

AIR TRANSPORT
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).

ALI, K. A. M., BLOY, A. W. LAMONT, P. J. and ABU-ASSAF, H. A.
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, pp 237-243 (June/July). *Errata, p 301 (Oct.).*

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS: SYMPOSIA
Transonic flow calculations around isolated inlet configuration, A. J. Peace, pp 103-110 (March).

ATMOSPHERE AND ATMOSPHERIC EFFECTS
On aircraft flight performance in a perturbed atmosphere, L. M. B. C. Campos, pp 302-312 (Oct.).

BALLOONS
Extension of hot air balloon flight duration through adaption of balloon surface characteristics, W. Hallmann, pp 385-392 (Dec.).

BARNES, J. H. and RANSOM, E. C. P.
The application of mass spectrometry to the study of mixing processes in confined gas flows, pp 53-62 (Feb.).

BARNES, F. H., BAXENDALE, A. J. and GRANT, I.
A lock-in effect in the flow over two cylinders, pp 128-138 (April).

BAXENDALE, A. J., GRANT, I. and BARNES, F. H.
A lock-in effect in the flow over two cylinders, pp 128-138 (April).

BENHAM, P. P. and O'KANE, B. A. A.
Damage thresholds for velocity impact on aircraft structural composites, pp 368-372 (Nov.).

BLOY, A. W., LAMONT, P. J., ABU-ASSAF, H. A. and ALI, K. A. M.
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, pp 237-243 (June/July). *Errata, p 301 (Oct.).*

BOOK REVIEWS — AUTHORS
Acton, J. R. and Squire, P. T. Solving equations with physical understanding, p 36 (Jan.).
Anderson, Jr J. D. Introduction to flight — second edition, p 35 (Jan.).
Cleveland, W. S. The elements of graphing data, p 112 (March).
Cole, H. W. Understanding radar, pp 112-113 (March).
Covert, E. E. et al (Editors). Thrust and drag: its prediction and verification. Progress in astronautics and aeronautics — Volume 98, p 152 (April).
Dawe, D. J. (Editor). Aspects of the analysis of plate structures: a volume in honour of W. H. Wittrick, p 36 (Jan.).
Gallagher, R. H. et al (Editors). Finite elements in fluids — Volume 6: finite elements and flow problems, p 112 (March).
Goldenstein R. J. (Editor). Fluid mechanics measurements, p 200 (May).
Gostelow, J. P. Cascade aerodynamics, p 200 (May).
Hoskin, B. C. and Baker, A. A. (Editors). Composite materials for aircraft structures, p 335 (Oct.).
Hughes, P. C. Spacecraft attitude dynamics, p 152 (April).
Johnson, D. Advanced structural mechanics: an introduction to continuum mechanics and structural dynamics, p 244 (June/July).
Johnston, G. S. Stringer panel analysis methods (in BASIC for PC's). p 111 (March).
Kinny, G. F. and Graham, K. J. Explosive shock in the air — Second edition, pp 152-153 (April).
Knott, E. F. et al. Radar cross section: its prediction, measurement and reduction, pp 200-201 (May).
Kuethe, A. M. and Chow, C. Y. Foundations of aerodynamics: bases of aerodynamic design — fourth edition, p 153 (April).

The Aeronautical Journal of the Royal Aeronautical Society

INCORPORATING THE INSTITUTION OF AERONAUTICAL ENGINEERS AND THE HELICOPTER ASSOCIATION OF GREAT BRITAIN

VOLUME LXXXX

JANUARY—DECEMBER 1986

The following is based on the indexing of the RAeS Publications Index 1897-1977, published by the Society.

ABU-ASSAF, H. A., ALI, K. A. M., BLOY, A. W. and LAMONT, P. J.
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, pp 237-243 (June/July). *Errata, p 301 (Oct.)*

AERODYNAMICS
The assessment of boundary layer two-dimensionality, C. J. Fraser, pp 41-48 (Feb.).
A calculation method for two-dimensional wall-bounded turbulent flows, L. J. Johnston, pp 174-184. (May).
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).
Damage thresholds for low velocity impact on aircraft structural composites, B. A. A. O'Kane and P. P. Benham, pp 368-372 (Nov.).
The effect of atmospheric turbulence on the dispersion of unguided missiles, M. Curcin and R. I. Harris, pp 139-151 (April).
An exact integral (field panel method for the calculation of two-dimensional transonic potential flow around complex configurations, P. M. Sinclair, pp 227-236 (June/July).
Experimental investigation of the turbulent boundary layer at high Reynolds numbers and a Mach number of 0·8, L. Gaudet, pp 83-94 (March).
Extension of hot air balloon flight duration through adaption of balloon surface characteristics, W. Hallmann, pp 385-392 (Dec.).
Finite element free vibration analysis of stiffened plates, A. Mukherjee and M. Mukhopadhyay, pp 267-273 (Aug./Sept.).
Frequency-domain application of Gauss-Newton method to extract aircraft longitudinal parameters, S. C. Raisinghani and A. K. Goel, pp 27-34 (Jan.).
The fundamentals of body-freedom flutter, Lt. T. Niblett, pp 373-377 (Nov.).
The induced downwash and lift on a wing of high aspect ratio in unsteady motion, P. Wilmott, pp 63-72 (Feb.).
The influence of roughness trips upon boundary-layer transition. J. C. Gibbings, O. T. Goksel and D. J. Hall, Part 1: Characteristics of wire trips, pp 289-301 (Oct.). Part 2: Characteristics of single spherical trips, pp 357-367 (Nov.). Part 3: Characteristics of rows of spherical transition trips, pp 393-398 (Dec.).
Installation aerodynamics of ejectors in combat aircraft, P. G. Knott and D. N. Cundy, pp 410-413 (Dec.).
Large deflections of a cantilever beam subjected to a tip concentrated rotational load, B. Nageswara Rao, B. P. Shastry and G. Venkateswara Rao, pp 262-266 (Aug./Sept.).
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, A. W. Bloy, P. J. Lamont, H. A. Abu-Assaf and K. A. M. Ali, pp 237-243 (June/July). *Errata, p 301 (Oct.).*
A lock-in effect in the flow over two cylinders, F. H. Barnes, A. J. Baxendale and I. Grant, pp 128-138 (April).
The 'minituft' surface flow visualisation method: experience of use in the RAE 5-m pressurised low-speed wind tunnel, D. G. Dobney, P. Hanson and S. P. Fiddes, pp 10-17 (Jan.).
New rotary rig at RAE and experiments on HIRM, C. O. O'Leary and E. N. Rowthorn, pp 399-409 (Dec.).
A note on the prediction of flying boat take-off, D. Howe, pp 49-52 (Feb.).
On aircraft flight performance in a perturbed atmosphere, L. M. B. C. Campos, pp 302-312 (Oct.).
On application of linearised theory to multi-element aerofoils. Part 2: Effects of thickness, camber and stagger, G. D. Watt and G. V. Parkinson, pp 339-356 (Nov.).
The prediction of the drag of aerofoils and wings at high subsonic speeds, R. C. Lock, pp 207-226 (June/July).
Pressure fluctuations caused by transonic shock-boundary-layer interaction, A. R. G. Mundell and D. G. Mabey, pp 274-282 (Aug./Sept.).
Recent developments in store separation and grid survey techniques using the ARA two-sting rig, M. E. Wood, pp 18-26 (Jan.).
Recent experience in the RAE 5-metre wind tunnel of a china clay method for indicating boundary layer transition, I. R. M. Moir, pp 6-9 (Jan.).
Spiral vortex flow over a swept-back wing, D. I. A. Poll, pp 185-199 (May).
Transonic flow calculations around isolated inlet configurations, A. J. Peace, pp 103-110 (March).
Two-dimensional flow past bluff flexible membranes of low porosity, H. T. Low and B. G. Newman, pp 313-334 (Oct.).

AEROFOILS
An exact integral (field panel) method for the calculation of two-dimensional transonic potential flow around complex configurations, P. M. Sinclair, pp 227-236 (June/July).
On the application of linearised theory to multi-element aerofoils. Part 2: Effects of thickness, camber and stagger, G. D. Watt and G. V. Parkinson, pp 339-356 (Nov.).
The prediction of the drag of aerofoils and wings at high subsonic speeds, R. C. Lock, pp 207-226 (June/July).
Pressure fluctuations caused by transonic shock/boundary-layer interaction, A. R. G. Mundell and D. G. Mabey, pp 274-282 (Aug./Sept.).
Spiral vortex flow over a swept-back wing, D. I. A. Poll, pp 185-199 (May).

AIR TRANSPORT
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).

ALI, K. A. M., BLOY, A. W. LAMONT, P. J. and ABU-ASSAF, H. A.
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, pp 237-243 (June/July). *Errata, p 301 (Oct.).*

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS: SYMPOSIA
Transonic flow calculations around isolated inlet configuration, A. J. Peace, pp 103-110 (March).

ATMOSPHERE AND ATMOSPHERIC EFFECTS
On aircraft flight performance in a perturbed atmosphere, L. M. B. C. Campos, pp 302-312 (Oct.).

BALLOONS
Extension of hot air balloon flight duration through adaption of balloon surface characteristics, W. Hallmann, pp 385-392 (Dec.).

BARNES, J. H. and RANSOM, E. C. P.
The application of mass spectrometry to the study of mixing processes in confined gas flows, pp 53-62 (Feb.).

BARNES, F. H., BAXENDALE, A. J. and GRANT, I.
A lock-in effect in the flow over two cylinders, pp 128-138 (April).

BAXENDALE, A. J., GRANT, I. and BARNES, F. H.
A lock-in effect in the flow over two cylinders, pp 128-138 (April).

BENHAM, P. P. and O'KANE, B. A. A.
Damage thresholds for velocity impact on aircraft structural composites, pp 368-372 (Nov.).

BLOY, A. W., LAMONT, P. J., ABU-ASSAF, H. A. and ALI, K. A. M.
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, pp 237-243 (June/July). *Errata, p 301 (Oct.).*

BOOK REVIEWS — AUTHORS
Acton, J. R. and Squire, P. T. Solving equations with physical understanding, p 36 (Jan.).
Anderson, Jr J. D. Introduction to flight — second edition, p 35 (Jan.).
Cleveland, W. S. The elements of graphing data, p 112 (March).
Cole, H. W. Understanding radar, pp 112-113 (March).
Covert, E. E. et al (Editors). Thrust and drag: its prediction and verification. Progress in astronautics and aeronautics — Volume 98, p 152 (April).
Dawe, D. J. (Editor). Aspects of the analysis of plate structures: a volume in honour of W. H. Wittrick, p 36 (Jan.).
Gallagher, R. H. et al (Editors). Finite elements in fluids — Volume 6: finite elements and flow problems, p 112 (March).
Goldenstein R. J. (Editor). Fluid mechanics measurements, p 200 (May).
Gostelow, J. P. Cascade aerodynamics, p 200 (May).
Hoskin, B. C. and Baker, A. A. (Editors). Composite materials for aircraft structures, p 335 (Oct.).
Hughes, P. C. Spacecraft attitude dynamics, p 152 (April).
Johnson, D. Advanced structural mechanics: an introduction to continuum mechanics and structural dynamics, p 244 (June/July).
Johnston, G. S. Stringer panel analysis methods (in BASIC for PC's). p 111 (March).
Kinny, G. F. and Graham, K. J. Explosive shock in the air — Second edition, pp 152-153 (April).
Knott, E. F. et al. Radar cross section: its prediction, measurement and reduction, pp 200-201 (May).
Kuethe, A. M. and Chow, C. Y. Foundations of aerodynamics: bases of aerodynamic design — fourth edition, p 153 (April).

Lewis, R. W. and Morgan, K. (Editors). Numerical methods in heat transfer — Volume III, p 74 (Feb.).
Muller, P. C. and Schiehlen, W. O. Linear vibrations: a theoretical treatment of multi-degree-of-freedom vibrating systems, p 73 (Feb.).
Oates, G. C. (Editor). Aerothermodynamics of aircraft engine components, p 378 (Nov.).
Odgers, J. and Kretschmer, D. Gas turbine fuels and their influence on combustion, p 283 (Aug./Sept.).
Pritchard, G. (Editor). Developments in reinforced plastics — 5: processing and fabrication, p 378 (Nov.).
Schonauer, W. and Gentzsch, W. (Editors). The efficient use of vector computers with emphasis on computational fluid dynamics, p 283 (Aug./Sept.).
Scorer, R. Cloud investigation by satellite, p 414 (Dec.).
Seddon, J. and Goldsmith, E. L. Intake aerodynamics: an account of the mechanics of flow in and around the air intakes of turbine-engined and ramjet aircraft and missiles, p 73 (Feb.).
Shames, I. H. and Dym, C. L. Energy and finite element methods in structural mechanics, pp 283-284 (Aug./Sept.).
Stanisic, M. M. The mathematical theory of turbulence, p 111 (March).
Turnill, R. (Editor). Jane's Spaceflight Directory 1986 — second edition, p 414 (Dec.).
Van Dyke, M. et al (Editors). Annual review of fluid mechanics — Volume 17, p 35 (Jan.).
Vinson, J. R. and Sierakowski, R. L. The behaviour of structures composed of composite materials, p 335 (Oct.).
Wiley, R. G. Electronic intelligence: the interception of radar signals, p 35 (Jan.).

BOOK REVIEWS — TITLES

Advanced structural mechanics: an introduction to continuum mechanics and structural dynamics, D. Johnson, p 244 (June/July).
Aerothermodynamics of aircraft engine components, G. C. Oats (Editor), p 378 (Nov.).
Annual review of fluid mechanics — Volume 17, M. Van Dyke et al (Editors), p 35 (Jan.).
Aspects of the analysis of plate structures: a volume in honour of W. H. Wittrick, D. J. Dawe (Editor), p 36 (Jan.).
The behaviour of structures composed of composite materials, J. R. Vinson and R. L. Sierakowski, p 335 (Oct.).
Cascade aerodynamics, J. P. Gostelow, p 200 (May).
Cloud investigation by satellite, R. Scorer, p 414 (Dec.).
Composite materials for aircraft structures, B. C. Hoskin and A. A. Baker (Editors), p 335 (Oct.).
Developments in reinforced plastics — 5: processing and fabrication, G. Pritchard (Editor), p 378 (Nov.).
The efficient use of vector computers with emphasis on computational fluid dynamics, W. Schonauer, W. and W. Gentzsch (Editors), p 283 (Aug./Sept.).
Electronic intelligence: the interception of radar signals, R. G. Wiley, p 35 (Jan.).
The elements of graphing data, W. S. Cleveland, p 112 (March).
Energy and finite element methods in structural mechanics, I. H. Shames and C. L. Dym, pp 283-284 (Aug./Sept.).
Explosive shocks in the air — second edition, G. F. Kinny and K. J. Graham, pp 152-153 (April).
Finite elements in fluids — Volume 6: finite elements and flow problems, R. H. Gallagher et al (Editors), p 112 (March).
Fluid mechanics measurements, R. J. Goldstein, p 200 (May).
Foundations of aerodynamics: bases of aerodynamic design — fourth edition, A. M. Kuethe and C. Y. Chow, p 153 (April).
Gas turbine fuels and their influence on combustion, J. Odgers and D. Kretschmer, p 283 (Aug./Sept.).
Intake aerodynamics: an account of the mechanics of flow in and around the air intakes of turbine-engined and ramjet aircraft and missiles, J. Seddon and E. L. Goldsmith, p 73 (Feb.).
Introduction to flight — second edition, J. D. Anderson Jr, p 35 (Jan.).
Jane's Spaceflight Directory 1986 — second edition, R. Turnhill (Editor), p 414 (Dec.).
Linear vibrations: a theoretical treatment of multi-degree-of-freedom vibrating systems, P. C. Muller and W. O. Schiehlan, p 73 (Feb.).
The mathematical theory of turbulence, M. M. Stanisic, p 111 (March).
Numerical methods in heat transfer — Volume III, R. W. Lewis and K. Morgan (Editors), p 74 (Feb.).
Radar cross section: its prediction, measurement and reduction, E. F. Knott et al, pp 200-201 (May).
Solving equations with physical understanding, J. R. Acton and P. T. Squire, p 36 (Jan.).
Spacecraft attitude dynamics, P. C. Hughes, p 152 (April).
Stringer panel analysis methods (in BASIC for PC's), G. S. Johnston, p 111 (March).
Thrust and drag: its prediction and verification. Progress in astronautics and aeronautics — Volume 98, E. E. Covert et al (Editors), p 152 (April).
Understanding radar, H. W. Cole, pp 112-113 (March).

BOUNDARY LAYERS

The assessment of boundary layer two-dimensionality, C. J. Fraser, pp 41-48 (Feb.).
The influence of roughness trips upon boundary-layer transition, J. C. Gibbings, O. T. Goksel and D. J. Hall. Part 1: Characteristics of wire trips, pp 289-301 (Oct.). Parts 2: Characteristics of single spherical trips, pp 357-367 (Nov.). Part 3: Characteristics of rows of spherical transition trips, pp 393-398 (Dec.).
Large deflections of a cantilever beam subjected to a tip concentrated rotational load, B. Nageswara Rao, B. P. Shastry and G. Venkateswara Rao, pp 262-266 (Aug./Sept.).
Pressure fluctuations caused by transonic shock/boundary-layer interaction, A. R. G. Mundell and D. G. Mabey, pp 274-282 (Aug./Sept.).
Spiral vortex flow over a swept-back wing. D. I. A. Poll, pp 185-199 (May).
On the application of linearised theory to multi-element aerofoils. Part 2: Effects of thickness, camber and stagger, G. D. Watt and G. V. Parkinson, pp 339-356 (Nov.).
The prediction of the drag of aerofoils and wings at high subsonic speeds, R. C. Lock, pp 207-226 (June/July).
Recent experience in the RAE 5-metre wind tunnel of a china clay method for indicating boundary layer transition, I. R. M. Moir, pp 6-9 (Jan.).
Transonic flow calculations around isolated inlet configurations, A. J. Peace, pp 103-110 (March).

BUCKLING AND INSTABILITY OF STRUCTURES

A stress intensity factor solution due to holes ahead of growing cracks in thin sheet material, J. B. Young and P. N. Campbell, pp 1-5 (Jan.).

CAMPBELL, D. R.

Software position and velocity limiting for a synergistic six degree-of-freedom motion system, pp 121-127 (April).

CAMPBELL, P. N. and YOUNG, J. B.

A stress intensity factor solution due to holes ahead of growing cracks in thin sheet material, pp 1-5 (Jan.).

CAMPOS, L. M. B. C.

On aircraft flight performance in a perturbed atmosphere, pp 302-312 (Oct.).

COMPUTATION

A conic-cubic method for curve fitting and function interpolation, J. J. Skrobanski and D. A. Lovell, pp 95-102 (March).

COMPUTERS

Software position and velocity limiting for a synergistic six-degree-of-freedom motion system, D. R. Campbell, pp 121-127 (April).
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).

CONTROL SYSTEMS

Control of V/STOL aircraft, J. A. Franklin, pp 157-173 (May).

CUNDY, D. N. and KNOTT, P. G.

Installation aerodynamics of ejectors in combat aircraft, pp 410-413 (Dec.).

CURCIN, M. and HARRIS, R. I.

The effect of atmospheric turbulence on the dispersion of unguided missiles, pp 139-151 (April).

CURVE FITTING

A conic-cubic method for curve fitting and function interpolation, J. J. Skrobanski and D. A. Lovell, pp 95-102 (March).

DOBNEY, D. G., HANSON, P. and FIDDES, S. P.

The 'minituft' surface and flow visualisation method; experience of use in the RAE 5-m pressurised low-speed wind tunnel, pp 10-17 (Jan.).

FIDDES, S. P., DOBNEY, D. G. and HANSON, P.

The 'minituft' surface flow visualisation method; experience of use in the RAE 5-m pressurised low-speed wind tunnel, pp 10-17 (Jan.).

FLIGHT PERFORMANCE

On aircraft flight performance in a perturbed atmosphere, L. M. B. C. Campos, pp 302-312 (Oct.).

FLIGHT SIMULATION

Control of V/STOL aircraft, J. A. Franklin, pp 157-173 (May).
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling, A. W. Bloy, P. J. Lamont, H. A. Abu-Assaf and K. A. M. Ali, pp 237-243 (June/July). *Errata, p 301 (Oct.).*
Software position and velocity limiting for a synergistic six-degree-of-freedom motion system, D. R. Campbell, pp 121-127 (April).

FLUID MECHANICS: FLOW

The application of mass spectrometry to the study of mixing processes in confined gas flows, E. C. P. Ransom and J. H. Barnes, pp 53-62 (Feb.).
A calculation method for two-dimensional wall-bounded turbulent flows, L. J. Johnston, pp 174-184 (May).
A conic-cubic method for curve fitting and function interpolation, J. J. Skrobanski and D. A. Lovell, pp 95-102 (March).
An exact integral (field panel method) for the calculation of two-dimensional transonic potential flow around complex configurations, P. M. Sinclair, pp 227-236 (June/July).
Experimental investigation of the turbulent boundary layer at high Reynolds numbers and a Mach number of 0·8, L. Gaudet, pp 83-94 (March).
The induced downwash and lift on a wing of high aspect ratio in unsteady motion, P. Wilmott, pp 63-72 (Feb.).
The influence of roughness trips upon boundary-layer transition, J. C. Gibbings, O. T. Goksel and D. J. Hall, Part 1: Characteristics of wire trips, pp 289-301 (Oct.). Part 2: Characteristics of single spherical trips, pp 357-367 (Nov.). Part 3: Characteristics of rows of spherical transition trips, pp 393-398 (Dec.).
A lock-in effect in the flow over two cylinders, F. H. Barnes, A. J. Baxendale and I. Grant, pp 128-138 (April).
The 'minituft' surface flow visualisation method; experience of use in the RAE 5-m pressurised low-speed wind tunnel, D. G. Dobney, P. Hanson and S. P. Fiddes, pp 10-17 (Jan.).
On the application of linearised theory to multi-element aerofoils. Part 2: Effects of thickness, camber and stagger, G. D. Watt and G. V. Parkinson, pp 339-356 (Nov.).

Recent experience in the RAE 5-metre wind tunnel of a china clay method for indicating boundary layer transition, I. R. M. Moir, pp 6-9 (Jan.).
Spiral vortex flow over as swept-back wing, D. I. A. Poll, pp 185-199 (May).
Transonic flow calculation around isolated inlet configurations, A. J. Peace, pp 103-110 (March).
Two-dimensional flow past bluff flexible membranes of low porosity, H. T. Low and B. G. Newman, pp 313-334 (Oct.).

FLYING BOATS
A note on the prediction of flying boat take-off, D. Howe, pp 49-52 (Feb.).

FRANKLIN, J. A.
Control of V/STOL aircraft, pp 157-173 (May).

FRASER, C. J.
The assessment of boundary layer two-dimensionality, pp 41-48 (Feb.).

GAUDET, L.
Experimental investigation of the turbulent boundary layer at high Reynolds numbers and a Mach number of 0·8, pp 83-94 (March).

GIBBINGS, J. C., GOKSEL, O. T. and HALL, D. J.
The influence of roughness trips upon boundary-layer transition. Part 1: Characteristics of wire trips, pp 289-301 (Oct.). Part 2: Characteristics of single spherical trips, pp 357-367 (Nov.). Part 3: Characteristics of rows of spherical transition trips, pp 393-398 (Dec.).

GOEL, A. K. and RAISINGHANI, S. C.
Frequency-domain application of Gauss-Newton method to extract aircraft longitudinal parameters, pp 27-34 (Jan.).

GOKSEL, O. T., HALL, D. J. and GIBBINGS, J. C.
The influence of roughness trips upon boundary-layer transition. Part 1: Characteristics of wire trips, pp 289-301 (Oct.). Part 2: Characteristics of single spherical trips, pp 357-367 (Nov.). Part 3: Characteristics of rows of spherical transition trips, pp 393-398 (Dec.).

GRANT, I., BARNES, F. H. and BAXENDALE, A. J.
A lock-in effect in the flow over two cylinders, pp 128-138 (April).

GUIDED MISSILES
Recent developments in store separation and grid survey techniques using the ARA two-sting rig, M. E. Wood, pp 18-26 (Jan.).

HALL, D. J., GIBBINGS, J. C. and GOKSEL, O. T.
The influence of roughness trips upon boundary-layer transition. Part 1: Characteristics of wire trips, pp 289-301 (Oct.). Part 2: Characteristics of single spherical trips, pp 357-367 (Nov.). Part 3: Characteristics of rows of spherical transition trips, pp 393-398 (Dec.).

HALLMANN, W.
Extension of hot air balloon flight duration through adaption of balloon surface characteristics, pp 385-392 (Dec.).

HANSON, P., FIDDES, S. P. and DOBNEY, D. G.
The 'minituft' surface flow visualisation method; experience of use in the RAE 5-m pressurised low-speed wind tunnel, pp 10-17 (Jan.).

HARRIS, R. I. and CURCIN, M.
The effect of atmospheric turbulence on the dispersion of unguided missiles, pp 139-151 (April).

HOWE, D.
A note on the prediction of flying boat take-off, pp 49-52 (Feb.).

JOHNSTON, L. J.
A calculation method for two-dimensional wall-bonded turbulent flows, pp 174-184 (May).

KNOTT, P. G. and CUNDY, D. N.
Installation aerodynamics of ejectors in combat aircraft, pp 410-413 (Dec.).

LAMINAR FLOW
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).

LAMONT, P. J., ABU-ASSAF, H. A., ALI, K. A. M. and BLOY, A. W.
The lateral dynamic stability and control of large receiver aircraft during air-to-air refuelling, pp 237-243 (June/July). *Errata, p 301 (Oct.).*

LOCK, R. C.
The prediction of the drag of aerofoils and wings at high subsonic speeds, pp 207-226 (June/July).

LOVELL, D. A. and SKROBANSKI, J. J.
A conic-cubic method for curve fitting and function interpolation, pp 95-102 (March).

LOW, H. T. and NEWMAN, B. G.
Two-dimensional flow past bluff flexible membranes of low porosity, pp 313-334 (Oct.).

MABEY, D. G. and MUNDELL, A. R. G.
Pressure fluctuations caused by transonic shock/boundary-layer interaction, pp 274-282 (Aug./Sept.).

MANUFACTURE
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).

MATERIALS
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).
Damage thresholds for low velocity impact on aircraft structural composites, B. A. A. O'Kane and P. P. Benham, pp 368-372 (Nov.).
Extension of hot air balloon flight duration through adaption of balloon surface characteristics, W. Hallmann, pp 385-392 (Dec.).

MILITARY AIRCRAFT
Installation aerodynamics of ejectors in combat aircraft, P. G. Knott and D. N. Cundy, pp 410-413 (Dec.).

MISSILES
The effect of atmospheric turbulence on the dispersion of unguided missiles, M. Curcin and R. I. Harris, pp 139-151 (April).

MOIR, I. R. M.
Recent experience in the RAE 5-metre wind tunnel of a china clay method for indicating boundary layer transition, pp 6-9 (Jan.).

MUKHERJEE, A. and MUKHOPADHYAY, M.
Finite element free vibration analysis of stiffened plates, pp 267-273 (Aug./Sept.).

MUKHOPADHYAY, M. and MUKHERJEE, A.
Finite element free vibration analysis of stiffened plates, pp 267-273 (Aug./Sept.).

MUNDELL, A. R. G. and MABEY, D. G.
Pressure fluctuations caused by transonic shock/boundary-layer interaction, pp 274-282 (Aug./Sept.).

NAGESWARA RAO, B., SHASTRY, B. P. and VENKATESWARA RAO, G.
Large deflections of a cantilever beam subjected to a tip concentrated rotational load, pp 262-266 (Aug./Sept.).

NEWMAN, B. G. and LOW, H. T.
Two-dimensional flow past bluff flexible membranes of low porosity, pp 313-334 (Oct.).

NIBLETT, LI. T.
The fundamentals of body-freedom flutter, pp 373-377 (Nov.).

O'KANE, B. A. A. and BENHAM, P. P.
Damage thresholds for low velocity impact on aircraft structural composites, pp 368-372 (Nov.).

O'LEARY, C. O. and ROWTHORN, E. N.
New rotary rig at RAE and experiments on HIRM, pp 399-409 (Dec.).

PARKINSON, G. V. and WATT, G. D.
On the application of linearised theory to multi-element aerofoils. Part 2: Effects of thickness, camber and stagger, pp 339-356 (Nov.).

PEACE, A. J.
Transonic flow calculations around isolated inlet configurations, pp 103-110 (March).

PHOTOGRAPHS

Aircraft
Harrier operations on land and sea, p 158 (May).
Two Hercules aircraft in air-to-air refuelling, p 301 (Oct.).
727 test aircraft, p 260 (Aug./Sept.).
Artist's impression of a futuristic advanced short-to-medium-range commercial aircraft, p 260 (Aug./Sept.).
Artist's impression of a subsonic aircraft, p 261 (Aug./Sept.).
Artist's impression of extremely advanced supersonic transport, p 261 (Aug./Sept.).
Artist's impression of a futuristic aircraft — a combination of a commercial aeroplane and the space shuttle, p 261 (Aug./Sept.).

Boundary layers
China clay flow pattern on slender body nose, pp 7-8 (Jan.).
Fluorescent mini-tufts on Model 477 — UV flash in 5 m tunnel rigging bay at night, p 12 (Jan.).
Large plates of aluminium-lithium alloy, p 251 (Aug./Sept.).
Laser-illuminated flow fields of a low speed wind tunnel model showing computational fluid dynamics, p 250 (Aug./Sept.).
Smoke tunnel, flow visualisation photographs, using 1 s time exposure of the bluff membranes, p 328 (Oct.).

Control systems
Flat panel display, p 258 (Aug./Sept.).
Photograph of a fibre optic part in a flight control system, p 258 (Aug./Sept.).
Photograph showing the horizontal situation indicator and other primary instruments, p 256 (Aug./Sept.).
View of the common flight deck of a 757 and a 767, p 255 (Aug./Sept.).

Miscellaneous
Advanced composites, p 252 (Aug./Sept.).
Automatic tape laying machines, p 252 (Aug./Sept.).
Large pieces of filament wound structure, p 254 (Aug./Sept.).
Thermoplastic wing rib, p 254 (Aug./Sept.).

Simulators
NASA Ames moving base simulators, p 167 (May).

Wind tunnels
Illustration of results obtained using the type of tufts in general use at RAE 5 m tunnels, p 10 (Jan.).

Photographic results of tests carried out over a range of incidence with two canard deflections, p 14 (Jan.).
Rig and supporting structures used in both an atmospheric wind tunnel and a variable density wind tunnel, p 402 (Dec.).
Scale model acoustic and aerodynamic test article installed in a Boeing wind tunnel, p 260 (Aug./Sept.).
A six degree-of-freedom two-sting rig, p 18 (Jan.).
'Before' and 'after' completion of tests) photographs of tufts, p 15 (Jan.).
'Wind-off' picture of tufts (at completion of tests) showing bare patches, p 14 (Jan.).

POLL, D. I. A.
Spiral vortex flow over a swept-back wing, pp 185-199 (May).

RAISINGHANI, S. C. and GOEL, A. K.
Frequency-domain application of Gauss-Newton method to extract aircraft longitudinal parameters, pp 27-34 (Jan.).

RANSOM, E. C. P. and BARNES, J. H.
The application of mass spectrometry to the study of mixing processes in confined gas flows, pp 53-62 (Feb.).

ROWTHORN, E. N. and O'LEARY, C. O.
New rotary rig at RAE and experiments on HIRM, pp 399-409 (Dec.).

ROYAL AERONAUTICAL SOCIETY: LECTURES
Control of V/STOL aircraft, J. A. Franklin, pp 157-173 (May).

SHASTRY, B. P., VENKATESWARA RAO, G. and NAGESWARA RAO, B.
Large deflections of a cantilever beam subjected to a tip concentrated rotational load, pp 262-266 (Aug./Sept.).

SKROBANSKI, J. J. and LOVELL, D. A.
A conic-/cubic method for curve fitting and function interpolation, pp 95-102 (March).

SINCLAIR, P. M.
An exact integral (field panel) method for the calculation of two-dimensional transonic potential flow around complex configurations, pp 227-236 (June/July).

STABILITY AND CONTROL
The lateral dynamic stability and control of a large receiver aircraft during air-to-air refuelling. A. W. Bloy, P. J. Lamont, H. A. Abu-Assaf and K. A. M. Ali, pp 237-243 (June/July). *Errata, p 301 (Oct.).*

STRUCTURES AND STRUCTURAL DESIGN
A stress intensity factor solution due to holes ahead of growing cracks in thin sheet material, J. B. Young and P. N. Campbell, pp 1-5 (Jan.).
Damage thresholds for low velocity impact on aircraft structural composites, B. A. A. O'Kane and P. P. Benham, pp 368-372 (Nov.).
Finite element free vibration analysis of stiffened plates, A. Mukherjee and M. Mukhopadhyay, pp 267-/273 (Aug./Sept.).
The fundamentals of body-freedom flutter, Ll. T. Niblett, pp 373-377 (Nov.).
Installation of aerodynamics of ejectors in combat aircraft, P. G. Knott and D. N. Cundy, pp 410-13 (Dec.).

SWIHART. J. M.
Cost effective transportation and high technology, pp 249-261 (Aug./Sept.).

TESTING
New rotary rig at RAE and experiments on HIRM, C. O. O'Leary and E. N. Rowthorn, pp 399-409 (Dec.).

TURBULENCE
A calculation method for two-dimensional wall-bounded turbulent flows, L. J. Johnston, pp 174-184 (May).
The effect of atmospheric turbulence on the dispersion of unguided missiles, M. Curcin and R. I. Harris, pp 139-151 (April).
Experimental investigation of the turbulent boundary layer at high Reynolds numbers and a Mach number of 0·8, L. Gaudet, pp 83-94 (March).

VENKATESWARA RAO, G., NAGESWARA RAO, B. and SHASTRY, B. P.
Large deflections of a cantilever beam subjected to a tip concentrated rotational load, pp 262-266 (Aug./Sept.).

VIBRATION
Finite element free vibration analysis of stiffened plates, A Mukherjee and M. Mukhopadhyay, pp 267-273 (Aug./Sept.).

VORTICES
The influence of roughness trips upon boundary-layer transition, J. C. Gibbings, O. T. Goksel and D. J. Hall, Part 1: Characteristics of wire trips, pp 289-301 (Oct.). Part 2: Characteristics of single spherical trips, pp 357-367 (Nov.). Part 3: Characteristics of rows of spherical transition trips, pp 393-398 (Dec.).
The lateral dynamics stability and control of a large receiver aircraft during air-to-air refuelling, A. W. Bloy, P. J. Lamont, H. A. Abu-Assaf and K. A. M. Ali, pp 237-243 (June/July). *Errata, p 301 (Oct.).*
A lock-in effect in the flow over two cylinders, F. H. Barnes, A. J. Baxendale and I. Grant. pp 128-138 (April).
Spiral vortex flow over a swept-back wing, D. I. A. Poll, pp 159-199 (May).
Two-dimensional flow past bluff flexible membranes of low porosity, H. T. Low and B. G. Newman, pp 313-334 (Oct.).

V/STOL
Control of V/STOL aircraft, J. A. Franklin, pp 157-173 (May).

WATT, G. D. and PARKINSON, G. V.
On the application of linearised theory to multi-element aerofoils. Part 2: Effects of thickness, camber and stagger, p 339-356 (Nov.).

WILMOTT, P.
The induced downwash and lift on a wing of high aspect ratio in unsteady motion, pp 63-72 (Feb.).

WIND TUNNELS
Experimental investigation of the turbulent boundary layer at high Reynolds numbers and a Mach number of 0·8, L. Gaudet, pp 83-94 (March).
The 'minituft' surface flow visualisation method; experience of use in the RAE 5-m pressurised low-speed wind tunnel, D. G. Dobney, P. Hanson and S. P. Fiddes, pp 10-17 (Jan.).
New rotary rig at RAE and experiments on HIRM, C. O. O'Leary and E. N. Rowthorn, pp 399-409 (Dec.).
Pressure fluctuations caused by transonic shock/boundary-layer interaction, A. R. G. Mundell and D. G. Mabey, pp 274-282 (Aug./Sept.).
Recent developments in store separation and grid survey techniques using the ARA two-sting rig, M. E. Wood, pp 18-26 (Jan.).
Recent experience in the RAE 5-metre wind tunnel of a china clay method for indicating boundary layer transition, I. R. M. Moir, pp 6-9 (Jan.).

WINGS
Cost effective transportation and high technology, J. M. Swihart, pp 249-261 (Aug./Sept.).
The fundamentals of body-freedom flutter, Ll. T. Niblett, pp 373-377 (Nov.).
The induced downwash and lift on a wing of high aspect ratio in unsteady motion, P. Wilmott, pp 63-72 (Feb.).
The prediction of the drag of aerofoils and wings at high subsonic speeds, R. C. Lock, pp 207-226 (June/July).
Spiral vortex flow over a swept-back wing, D. I. A. Poll, pp 159-199 (May).

WOOD, M. E.
Recent developments in store separation and grid survey techniques using the ARA two-sting rig, pp 18-26 (Jan.).

YOUNG, J. B. and CAMPBELL, P. N.
A stress intensity factor solution due to holes ahead of growing cracks in thin sheet meterial, pp 1-5 (Jan.).